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## Asymmetric magnetic reconnection between two coalescing flux ropes as squeezed by convergent flows

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We identify two coalescing flux ropes as squeezed by convergent ion flows near the magnetopause from the MMS observations. According to the electron distributions, we find that one flux rope is closer to the magnetosphere, while the other is closer to the magnetosheath. A current sheet with magnetic field reversal is found to sit at the interface between the two colliding flux ropes, and have magnetic reconnection occurring in the ion diffusion region (IDR). Due to the density asymmetry of flux ropes, the embedded magnetic reconnection event with a significant guide field component shows a large asymmetry in energy conversion across the reconnection site. On the side where the flux rope is closer to the magnetosphere with low density, we find that electrons gained energy from electromagnetic fields resulting in a parallel heating effect. In contrast, ions are found to obtain the energy from electromagnetic fields on the other side of the reconnection current sheet, where the flux rope is near the magnetosheath with high density.